ABSTRACT OF THE DISCLOSURE

In a roller chain transmission, the diameter D of the rollers, the outer diameter d of the pins, and the height H of the inner plates satisfy the relationships $0.72P \leqq D \leqq 0.79P$, $0.40P \leqq d \leqq 0.44P$, and $0.96P \leqq H$, with respect to the chain pitch P. The radius r of the arc of the tooth gap bottom of the sprocket teeth satisfies the relationship $0.505D \leqq r \leqq 0.505D + 0.069\sqrt[3]{D}$. The transmission chain exhibits high durability due to improved strength and wear resistance under high loads.